## ABDOMEN.

**I. Clinical and Experimental Study of Peritoneal Adhesions occurring after Laparotomy.** By DR. K. VOGEL. The clinical portion of this study is based on five cases from Schede's clinic in Bonn. In each case peritoneal adhesions were separated by operation but recurred, caused ileus, and in all but one patient, death. The essential lesion was an aseptic, recurrent, adhesive peritonitis. In Case 1 the exciting cause was intra-abdominal hæmorrhage from a contusion; in Cases 2 and 3 the excitants were an artificial anus and the extirpation of a tumor; in Case 4, intestinal ulceration, and in Case 5 a nephrorrhaphy, where an iodoform gauze tampon was used in the after-treatment (chemical irritation acting transperitoneally?). The last patient recovered after operation and the early postoperative use of aloes, and later of electricity, abdominal massage, and gymnastics.

The author made many experiments on animals in studying the etiology of adhesive peritonitis.

Apart from the natural tendency of the peritoneum to form adhesions, the author lists the following as causes: (1) Hæmorrhage, from intraperitoneal wounds, in so far as the injury hinders absorption, causes clotting, and by means of the clots occasions broader adhesions than could arise from the injury *per se;* (2) mechanical irritation and injury; (3) sloughs which are insufficient to hinder primary union; (4) chemical irritants insufficient to hinder union; (5) foreign bodies; (6) infection. Quietude of the intestine markedly favors the formation of adhesions.

In prophylaxis the author recommends, of course, aseptic instead of antiseptic technique; avoidance of unnecessary injury to the peritoneum, especially such as is caused by the use of sharp hooks (volsellum, etc.); avoidance of the cautery; careful suturing; wire is better than silk.

How to avoid recurrence after separation of adhesions by operation has been studied by the author in another series of experiments. While other experimenters have used salt solution

(Müller), the application of collodion to the ligature stumps (Stern), paraffin or tallow or gold-beater's skin, the author has tried decoction of salep, egg albumen, and a thick solution of gum Arabic thrown into the belly to act as a lubricant between the viscera.

The gum Arabic solution acted well. (Gum Arabic, 1; normal salt solution, 2, filtered and sterilized.) It was applied as follows: After almost complete closure of the wound, a drainage tube was passed into the belly, through this the solution was injected, the tube removed, and the suture completed.

To regulate peristalsis, subcutaneous injections of atropin and still better of salicylate of physostigmin were used. In one case after appendicectomy the latter drug was used in 0.0004 doses, from two to four times daily with good effect.—*Deutsche Zeitschrift für Chirurgie,* Band lxiii, 296.

**II. Talma's Operation.** By Dr. Bunge (Königsberg). On an experience of eight cases in the Königsberg clinic and a review of those published, Bunge discusses the results of and indications for the operation independently proposed by Talma and Drummond. The operation aims to provide collateral circulation in portal obstruction, by fixing the omentum to the abdominal wall, sometimes also by fixing the spleen, liver, or gall-bladder as well. The omental fixation may be intra- or extraperitoneal. Ito and Orni consider it best to produce extensive adhesions of the intestines to each other and to the belly wall.

The eight cases operated on in Königsberg were as follows:

(1) Syphilitic cirrhosis liver with great ascites. Omental fixation without benefit. Fixation of spleen caused gradual disappearance of the ascites

(2) Atrophic cirrhosis with great ascites. Omental fixation without benefit. Peritonitis developed, for which posterior colpotomy was performed to give drainage.

(3) Typical alcoholic cirrhosis with marked ascites. Omental fixation with brilliant result.

(4) Atrophic cirrhosis with great ascites. Omental fixation with negative result. Death in two months.

(5) Cirrhosis with severe gastric and intestinal hæmorrhage and slight ascites. Omental fixation with cessation of hæmorrhage and ascites.

(6) Cirrhosis of apparently cardiac origin. Omental fixation with improvement to the extent that the ascitic fluid did not require such frequent removal by puncture.

(7) Atrophic cirrhosis with great ascites. Omental fixation. Same result as in 6.

(8) Atrophic cirrhosis with moderate ascites. Omental fixation. Disappearance of ascites.

From literature the author was able to gather reports of ninety cases of Talma's operation, of which number only seventy-nine are suitable for statistics. Among these there are reported thirty-two recoveries, fifteen improvements, and thirty-two bad results.

The indications for operation are those diseases which lead to portal obstruction.

(1) Thrombosis of the portal vein or constriction by inflammatory products or tumors.

(2) Atrophic cirrhosis.

(3) Cardiac cirrhosis.

(4) Pericarditic pseudohepatic cirrhosis (Pick).

(5) Possibly Zuckergussleber.

The dangers of the operation are

(1) The danger of intestinal obstruction due to the omental fixation. This appears to be very slight.

(2) The danger of hernia when the fixation is extraperitoneal.

(3) The short circuiting of the liver. A number of patients presented symptoms which disappeared under a carbohydrate diet. The question of diet deserves study.

*Contraindications.*—Great disturbances of hepatic function, especially icterus, acholia, and hypocholia of the fæces, as well as grave cardiac and renal complications.

*Conclusions.*—(1) In cases of portal obstruction, Talma's operation has given about 40 per cent. of symptomatic cures.

(2) The chief benefit derived from the operation is the removal of the ascites, but gastro-intestinal hæmorrhage of portal origin constitutes an indication for the operation.

(3) The operation of choice is omental fixation, yet splenofixation has its use.

(4) Grave liver disturbance is a contraindication. Diminution of the excretion of urea, and alimentary glycosuria or Lävulosuria cannot be considered contraindications.

(5) When delirium develops or other symptoms of the liver being markedly shut out from the circulation, the diet must be regulated.—*Verhandlungen der deutschen Gesellschaft für Chirurgie,* 1902; *Centralblatt für Chirurgie,* 1902, No. 26.

**III. Diversion of the Portal Circulation by Direct Union of the Venæ Portæ with the Vena Cava.** By PROFESSOR IGINIO TANSINI (Palermo). Finding much opposition to the Talma operation, which is both very indirect and incomplete, the author and his assistants have endeavored to unite the portal vein directly to the inferior vena cava. The method adopted was the following: Expose and isolate the venæ portæ and a small portion of the vena cava. Apply two forceps with rubber-covered blades to control the blood in the vena cava; similarly apply one forceps to the portal vein. Ligate the venæ portæ at the hilus of the liver and divide it. Make an incision in, or, better, clip a spindle-shaped portion out of, the wall of the vena cava between the forceps. Place the open end of the venæ portæ into this opening and unite the wound margins with a continuous silk suture. It is not necessary to avoid penetrating the lumen If one now removes the clamps, one notes the blood flow from the portal vein into the vena cava, and the normal

color reappear in the intestines which had been rendered blue by the temporary interruption of circulation. The animals operated upon were plentifully fed with bones, etc. They were kept under observation for months, and had become fat before they were killed. (Seventy per cent. of the cases lived.)—*Centralblatt für Chirurgie,* 1902, No. 36.

JOHN F. BINNIE (Kansas City).

**IV. Subcutaneous Rupture of the Intestine after Contusion of the Abdomen.** By A. NEUMANN (Berlin). The author reports a case which recovered after laparotomy for a perforation of the duodenum, and in addition reviews all of the cases of such injury occurring during the past twenty years in the service of Hahn at Friedrichshain. The case upon which he operated was that of a man who had fallen fifteen feet, his abdomen striking upon the edge of a barrel. The laparotomy was performed six hours after the injury, and a perforation of the duodenum, with incipient peritonitis, found. The perforation in the duodenum was sutured. Recovery took place after severe symptoms of peritonitis had been present. Of 133 cases of contusion of the abdomen admitted to Friedrichshain during the past twenty years, sixty-one were complicated by serious visceral injuries. The intestine was most frequently involved (twenty-one cases); the kidney next (sixteen). The manner in which the force acts is either over a circumscribed area or in a diffuse manner. The former showed in sixty-eight cases, seventeen, or 26 per cent., ruptures of the intestine. In the latter variety, where the force acts over a wider area, there were only four ruptures of the intestine, or 7 per cent. Such a force is more likely to injure the solid viscera. He explains these variations by the theory that when a person is run over, falls from a height, or is crushed, that the intervals between the application of the force and the impact are sufficient to permit of reflex contraction of the abdominal muscles. It is also true that the crest and spine of the ilium serve to break the force of the fall or crush.

In horse-kicks or falls upon an object, the action is so rapid, however, that no protection can be given by the abdominal muscles. Most frequently the intestine is either crushed (resulting in immediate or later perforation) or it is torn from its mesentery, or at some fixed point like the duodenojejunal flexure. Bursting is quite rare, only once in twenty-two cases. The intestine is usually caught between the vertebral column and the force. There are no pathognomonic symptoms. Shock may come on immediately and be very severe, and yet there may be only a simple contusion without visceral injury. On the other hand, serious cases may present slight, if any, symptoms of shock. One of the most characteristic symptoms is the board-like rigidity of the abdominal muscles. Symptoms of peritonitis appear quite early; hence if one wishes to improve the present high mortality rate in these cases, they should be operated upon as early as possible. Of the twenty-two cases reported, many died without operation; others did not survive the operation more than an hour. In a large number the patient either did not give his consent until too late or did not enter the hospital until after the second or third day. Only the one case which Neumann operated upon survived. This, he states, is the general experience in large hospitals, and can only be improved by earlier recognition of the condition.—*Deutsche Zeitschrift für Chirurgie,* Band lxiv, No. 7.

**V. Hæmatemesis in Appendicitis.** By DR. E. NITZSCHE. When hæmatemesis occurs, one is apt to think of ulcer or carcinoma of the stomach, or of œsophageal varices from hepatic cirrhosis. We are now becoming acquainted with a larger class of cases of more diffuse etiology.

Rodman has called attention to its being a form of vicarious menstruation. Others have reported its frequent occurrence as a complication of laparotomy, especially after operations upon the omentum and bile passages. It can be best explained as being of embolic origin. Dieulafoy has reported cases of severe hæmate-

mesis following appendicitis. He believes in the absence of any macroscopic changes in the gastric mucosa that peritonitis was the cause.

The author reports a case occurring in a man sixty-two years of age who had a typical attack of appendicitis. Upon the second day he vomited a large quantity of coffee-ground material which gave the chemical reactions of blood. The patient died upon the fourth day of the disease. The autopsy showed a gangrenous appendix lying in a not well walled off intraperitoneal abscess cavity. The veins in the mesentery and omentum were not thrombosed. The jejunum and stomach were filled with a blackish fluid. In the mucous membrane of the fundus and greater curvature there were innumerable flat pinhead-sized ulcers covered in part by blood-clots. There were evidences of a diffuse septic peritonitis.

In view of the fact that the autopsy was performed three hours after death, the gastric ulcerations could not be considered as due to post-mortem digestion. Microscopically, the ulcerations were seen to involve the mucosa and submucosa. In one vein of the submucosa a fresh thrombus was found. There were also many areas of necrosis near the open ends of the glands, and at these points ulcers had formed.

Hæmorrhage takes place from these many small ulcers, and the cause of the latter is undoubtedly a toxic one. The glands of the stomach take up the poison, and in excreting it become necrotic and ulcers form. The toxins reach the stomach from the septic peritonitis either through the general circulation or in a retrograde manner through the veins, especially of the omentum.—*Deutsche Zeitschrift für Chirurgie,* Band lxiv.

DANIEL N. EISENDRATH (Chicago).

## GENITO-URINARY ORGANS.

**I. Injuries of the Kidney.** By DR. WALDVOGEL. The author has collected twenty-three cases occurring between 1895